

REMARKS**1. Status of Claims**

Claims 1-15, 17-21, 24, 35, 38, 40 and 41 remain under consideration. All are subject to a final rejection as set forth in the Office Action of October 11, 2001. Applicant thanks Examiner Tran A for the telephone conference on November 20, 2001 in which two aspects of the Office Action were discussed. In particular, as described further below, the Section 112 rejection and the teaching of the Young reference, U.S. No. 4,866,891 were discussed.

2. Rejections Under Section 112

The Office Action rejected claim 1 under Section 112 for indefiniteness. The Office Action asserts that the phrase "connective structure is free of connection to any wall" is indefinite and viewed as "contradicting the invention". It is further asserted that:

As one block is assembled into a wall, the connective structure must connect to a wall of an adjacent block, either directly or indirectly. The claimed limitation "free of connection" contradicts the invention and is thus not considered.

Applicant respectfully submits that in the context of the claim as a whole this phrase is not indefinite or contradictory and that the phrase should be considered, because the invention as claimed in claim 1 describes:

A discrete, preassembled, composite block unit for independent placement as a unit with other laterally and vertically adjacent units to form a wall structure . . .

wherein the connective structure is free of connection to any wall of any adjacent block unit when the block unit is in a wall structure . . .

(emphasis added.) This makes evident that each block unit is a discrete unit that can be placed in a wall independently of other block units and that the connective structure of any one block unit

is free of structural connection to any wall of any adjacent block unit. However, to assist in clarifying this, per the conversation with Examiner Tran A on November 20, 2001, applicant has amended claim 1 to insert the words "direct, structural" in front of "connection." For further clarification of claim 1, and because the word "solid" was intended as a geometric shape description but might be read as a physical description of a block unit, the word "solid" has been replaced with "block". Although the Section 112 rejection was directed to "claims 1", because claims 17 and 35 contain similar "free of connection" phrasing, a similar amendment is made in these claims, as well.

3. Rejections Under Section 103

The Office Action sets forth the following prior art rejections of various claims:

| <u>Claims</u> | <u>Rejection(s)</u> |
|--|---|
| 1-5, 10, 17-19, 21, 24, 35, 40-41 | § 103(a) unpatentable over Boeck in view of Young |
| 11 | § 103(a) unpatentable over Boeck in view of Young |
| 1, 2, 6, 8, 17-19, 21, 41 | § 103(a) unpatentable over Horobin in view of Young |
| 1, 2, 6, 9, 12-14, 15, 17, 19-21, 24, 35, 38 | § 103(a) unpatentable over Stewart Jr. in view of Boeck |
| 7 | § 103(a) unpatentable over Stewart Jr. in view of Boeck and Smith |

It is respectfully submitted that the teachings of the cited prior art, taken individually or in the cited combinations, are insufficient to support the above rejections, for the following reasons.

4. The Cited Prior Art Combinations Do Not Support the Section 103 Rejections

In order for a combination of references to establish a case of *prima facie* obviousness,

three requirements must be met:

1. some suggestion or motivation either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine the teachings;
2. a reasonable expectation of success; and
3. the prior art references when combined must teach or suggest all the claim limitations.

MPEP §2142.

The cited combinations of references do not establish a case of *prima facie* obviousness against independent claims 1, 17 and 35 as amended, because, among other reasons, the cited combinations do not disclose, or even suggest, the combinations of elements recited in applicant's amended claims. The references are addressed below.

The present invention involves a discrete composite block unit for independent placement with other adjacent units to form a wall structure. The block is formed from first and second walls, at least one of which is of a masonry material. A connective structure formed of a non-masonry material is connected between first and second walls. The connective structure securely positions the first and second walls as opposite faces of a discrete rectangular block. The connective structure of each block unit has at least two connectors, each of which is connected to one of the first and second walls, but each connective structure is free of direct, structural connection to any wall of an adjacent block unit when the block unit is in a wall structure.

All of the cited references show structures different from applicant's and all have fundamental teaching deficiencies as a basis for the rejections asserted against the claims to which they are applied. No reference or combination teaches all the elements claimed by applicant.

Boeck – This patent teaches a form system for casting large panels. Foam panels 10, 12, 14, 16 which become the outside surfaces (non-vertical load-bearing) of the cast panels are interlocked with the aid of connectors 18, 20, 22, 24. The connectors have planar end members 30, 32, 34, 36 that overlap between vertically adjacent foam panels and provide a connection between such adjacent panels. In particular, in Boeck:

... connectors constructed in accordance with the invention interlock the panels transversely, horizontally and vertically, thus significantly improving the structural integrity of a completed foam panel concrete form.

Boeck, col. 1, lines 44-47. There is no teaching of a discrete, preassembled, composite block unit with at least one load-bearing, masonry wall for independent placement as a unit with other laterally and vertically adjacent block units to form a wall structure.

Horobin – This patent also teaches a form system for casting large panels. Synthetic plastic panels 12, 14 are spaced apart by means of interlocking end walls or panels 16 and a plurality of strut members 18. The forms are a lightweight cellular plastic; thus the assembled forms do not include masonry outer walls. There is no teaching of a discrete, preassembled, composite block unit with at least one masonry wall for independent placement as a unit with other laterally and vertically adjacent block units to form a wall structure.

Stewart Jr. – This patent teaches a tile building wall made up of several connecting pieces. The side pieces 10 and the cross pieces 12, 15 are made of the same material, terra cotta and glazed tile being mentioned. Thus, the side pieces and cross pieces are all masonry. However, the pieces do not form discrete, preassembled block units, because the cross pieces, 12 and 22 used at the edges of side pieces 10 overlap and connect to laterally adjacent side pieces. Specifically,

when two side pieces are laid end to end, as shown in Fig. 1, the adjacent ribs 11 of the side pieces will form a dovetail groove between them adapted to receive the dovetail heads or keys 13 which are formed on the cross pieces 12.

Stewart, Jr., p. 1, lines 40-45; see Figs 1, 6 (emphasis added). With this construction, the tiles must be assembled from components in place in a wall structure, and the cross piece of one block has a direct connection to a wall ("side piece") of the adjacent block. This structure is not suited to pre-assembly of a discrete block unit usable for independent placement. The Stewart, Jr. patent teaches no such block unit.

Young -- The Young '891 patent is cited in combination with the Boeck patent (rejection of claim 11) and the Horobin patent (rejection of claims 1, 2, 6, 8, 17-19, 21, 41). The Office Action asserts:

Young discloses plastic foamed concrete walls forming the wall panels (foamed concrete being masonry-type).

However, as discussed with Examiner Tran A on November 20, 2001, a computer search on the text of the Young '891 patent shows that "foamed concrete" is used eight times in the phrase "foamed concrete forming sections" in the abstract, claims and summary. In each case this refers to foamed plastic sections for concrete forming, not to concrete that is foamed. A review of

column 4, lines 7+ of the Young '891 patent shows that the invention uses "foamed plastic," and that this is preferably an expanded polystyrene material selected in part for its insulating properties. Young does not teach the use of a foamed concrete or any other masonry for the wall panels 11, 12.

The cited combinations of references do not establish a case of *prima facie* obviousness against independent claims 1, 17 and 35 as amended, because, among other reasons, the cited combinations do not disclose, or even suggest the full combination of elements recited in applicant's amended claims. Specifically, at least the following teaching differences exist:

| <u>Claims</u> | <u>Rejection(s)</u> | <u>Difference(s) in Cited Combination</u> |
|-----------------------------------|---|--|
| 1-5, 10, 17-19, 21, 24, 35, 40-41 | § 103(a) unpatentable over Boeck in view of Young | Shows connecting structure connecting adjacent walls; no teaching of a discrete block unit with connecting structure free of any direct structural connection to an adjacent block; walls connected are foam, not masonry-type wall; insulating qualities achieved by foam walls, not applicant's connective structure |
| 11 | § 103(a) unpatentable over Boeck in view of Young | Same as for claim 1, on which this claim depends |

| | | |
|---|---|--|
| 1, 2, 6, 8, 17-19, 21, 41 | § 103(a) unpatentable over Horobin in view of Young | No teaching of a discrete block unit with connecting structure free of any direct structural connection to an adjacent block; walls connected are foam, not masonry-type wall; insulating qualities achieved by foam walls not connective structure |
| 1, 2, 6, 9, 12-14, 15, 17, 19-21, 24, 35, 38 | § 103(a) unpatentable over Stewart Jr. in view of Boeck | Shows connecting structure connecting adjacent walls; no teaching of a discrete block unit with connecting structure free of any direct structural connection to an adjacent block; |
| 7 | § 103(a) unpatentable over Stewart Jr. in view of Boeck and Smith | Same as for claim 1, on which this claim depends |

The differences in structure between applicant's claims and the prior art are significant and lead to important advantages over the prior art. Applicant's invention, being a discrete unit with a connective structure requiring no connection to adjacent block units permits construction to occur with conventional block-laying tradesmen, using conventional mortar techniques. But applicant's invention makes their job easier and their work more efficient, because each unit is lighter and easier to handle than a conventional concrete/masonry block of the same face area. There is no need for extra connection operations or for manipulation of applicant's connective structure to join to adjacent wall units. The connective structure is pre-assembled with the walls

before the block is placed. The block can simply be placed and its walls mortar joined to other blocks.

5. Conclusion

In view of the above amendments and discussion, applicant respectfully submits that the application is in condition for allowance. A Notice of Allowance is respectfully requested.

It is believed that no additional fees are due in connection with this communication. However, the Office is hereby authorized to charge any deficiency, or credit any overpayment to Deposit Account 04-1420.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendments. The attached pages are captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE**In the claims:**

Please amend claims 1, 17 and 35 as follows:

1. (Twice Amended) A discrete, preassembled, composite block unit for independent placement as a unit with other laterally and vertically adjacent units to form a wall structure, comprising:

 a first wall and a second wall, at least one of which is load bearing for vertical loads and made from a first, masonry-type material;

 a connective structure formed of a second, non-masonry-type material and connected between the first and second walls, said connective structure having at least two connectors;

 wherein each of the connectors is connected to one of the first and second walls, such that prior to placement of the block unit in a wall structure the first and second walls are securely positioned with respect to one another as opposite faces of a discrete, substantially rectangular. [solid] block, each face having a face area;

 wherein the connective structure is free of direct, structural connection to any wall of any adjacent block unit when the block unit is in a wall structure; and

 wherein the connective structure comprises arms supporting the at least two connectors and said arms provide a thermal conduction path of limited vertical cross-sectional area relative to either wall face area.

17. (Twice Amended) A connective structure for forming a discrete, preassembled, composite block unit for independent placement as a unit with other laterally and vertically adjacent units to

form a wall structure, each block unit having a first wall and a second wall, each with a face area and at least one of which is load-bearing for vertical loads, comprising:

 a plurality of elements forming arms and connectors for connecting the connective structure between the first wall and the second wall;

 wherein the connective structure is free of direct, structural connection to any wall of any adjacent block unit when the block unit is in a wall structure; and

 wherein the connective structure comprises at least one arm extending between the first and second walls and supporting at its opposed ends connectors and said arm provides a thermal conduction path of limited vertical cross-sectional area relative to either face area.

35. (Twice Amended) A discrete block unit for independent placement as a unit with other laterally and vertically adjacent units to form a wall structure comprising:

 a first wall and a second wall, at least one of which is made from a masonry material and capable of vertical load bearing and each of which has a connector formation and a vertical face area;

 a connective structure of non-masonry material positioned and connected between the first and second walls, said connective structure having at least one connector that engages the connector formation at the first wall and at least one connector that engages the connector formation at the second wall;

 wherein the connective structure is free of direct, structural connection to any wall of any adjacent block unit when the block unit is in a wall structure; and

wherein the connective structure comprises arms supporting at least two connectors and said arms provide a thermal conduction path of limited vertical cross-sectional area relative to either wall face area.